

# Notice of Allowability

Application No.

09/994,447

Examiner

Fred Ferris

Applicant(s)

BUSH, STEPHEN FRANCIS

Art Unit

2128

## -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 21 August 2006.
2. ☒ The allowed claim(s) is/are 1-7.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All b) ☐ Some\* c) ☐ None of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

### Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),  
Paper No./Mail Date 11102006.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

FRED FERRIS  
PRIMARY EXAMINER  
TECHNOLOGY CENTER 2100

### **DETAILED ACTION**

1. *Prosecution on the merits of this application is now reopened and the finality of the rejection of the last Office action is withdrawn. Claims 1-8 remain pending in this application. Claims 1-7 have now been allowed over the prior art of record in view of applicant's arguments filed 21 August 2006 and the Examiner's Amendment of record appearing below now placing this application in condition for allowance. Applicants now cancel claim 8.*

### **EXAMINER'S AMENDMENT**

2. *An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee. Authorization for this amendment was given by Mr. M. Petrocelli on 9 November 2006.(See interview summary)*

*In the claims:*

*Claim 8 is cancelled and the application has been amended as follows:*

*Amend the claims as follows:*

8. *(cancelled)*

*In the specification:* *Delete the phrase "(attorney docket no. 14874)" in line 3-4 of page 2 in the specification.*

### **Response to Arguments**

3. *Applicant's arguments filed 21 August 2006 have been fully considered.*

Regarding applicant's response to 103(a) rejection: The previous 103(a) rejection of claims 1-7 is now withdrawn in view of applicant's arguments filed 21 August 2006.

In particular, applicant's arguments have specifically defined the meaning of each claim limitation of independent claim 1, as embodied by the corresponding sections of applicants specification (See: page 4, line 22 to page 5) inclusive of the term "algorithmic active packet" (See: page 10, lines 3-15). Also see Interview Summary and Examiner's reasons for allowance below.

The previous rejection of claim 8 is now moot in view applicants' cancellation of the claim. (See: Examiner's amendment and Interview summary below)

Regarding applicant's response to 101 rejection: Applicant's cancellation of claim 8 now renders the previous 35 USC 101 moot. (See: Examiner's amendment and Interview summary below)

#### **Allowable Subject Matter**

4. Claims 1-7 are allowed over the prior art of record.

The following is an examiner's statement of reasons for allowance:

Applicants are disclosing a method for the optimization of a command sequence for a UAV operating in a simulated environment, inclusive of modifying a mission command sequence, simulating the performance of the modified (new) command sequence, and subsequently selecting command sequences to provide an optimal simulated mission outcome using active networking. This has been disclosed in the prior art of record.

However, the prior art does not disclose the specific sequence of method steps inclusive of simulating the performance of an initial UAV command sequence resulting in a mission outcome, modifying the command sequence, and subsequently iteratively simulating the modified performance resulting in another (optimized) simulated mission outcome, in combination with selecting command sequences based on the optimal simulated mission outcome which are encoded as an algorithmic active packet for the selected command sequences as now required by independent claim 1.

The closest prior art uncovered during examination teaches certain limitations of the claimed invention as follows:

U.S. Patent 6,122,572 issue to Yavnai: teaches optimization of a command sequence for a UAV operating in a simulated environment, inclusive of modifying a mission command sequence, simulating the performance of the modified (new) optimal command sequence. However Yavnai does not explicitly disclose the specific sequence of method steps that includes simulating the performance of an initial UAV command sequence resulting in a mission outcome, modifying the command sequence, and subsequently iteratively simulating the modified performance resulting in another (optimized) simulated mission outcome, in combination with selecting command sequences based on the optimal simulated mission outcome which are encoded as an algorithmic active packet for the selected command sequences as now required by independent claim 1.

"The TRAC Mission Manager Autonomous Control Executive", Johnson et al. IEEE 0-7803-6599-2/01. IEEE February 2001: also teaches optimization of a command

*sequence for a UAV operating in a simulated environment, inclusive of modifying a mission command sequence, simulating the performance of the modified (new) optimal command sequence and includes the use of active networks. However, Johnson again does not explicitly disclose these elements in combination with selecting command sequences based on the optimal simulated mission outcome which are encoded as an algorithmic active packet for the selected command sequences as now required by independent claim 1.*

*It is further noted that the examiner has given patentable weight to the preamble of independent claim 1 since, in this case, the preamble limits the body of the claims.*

*MPEP 2163 recites the following:*

*"The examiner should evaluate each claim to determine if sufficient structures, acts, or functions are recited to make clear the scope and meaning of the claim, including the weight to be given the preamble. See, e.g., Bell Communications Research, Inc. v. Vitalink Communications Corp., 55 F.3d 615, 620, 34 USPQ2d 1816, 1820 (Fed. Cir. 1995) ("[A] claim preamble has the import that the claim as a whole suggests for it."); Corning Glass Works v. Sumitomo Elec. U.S.A., Inc., 868 F.2d 1251, 1257, 9 USPQ2d 1962, 1966 (Fed. Cir. 1989) (The determination of whether preamble recitations are structural limitations can be resolved only on review of the entirety of the application "to gain an understanding of what the inventors actually invented and intended to encompass by the claim.").*"

*In this case, the preamble recitation of "optimizing a command sequence of a UAV to accomplish mission objectives" is further defined and limited in the body of the claim as simulating the performance of an initial UAV command sequence resulting an a mission outcome, modifying the command sequence, and subsequently iteratively simulating the modified performance resulting in another (optimized) simulated mission outcome, and further selecting command sequences based on the optimal simulated*


*mission outcome which are encoded as an "algorithmic active packet" for the selected" command sequences.*

*Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."*

### **Conclusion**

5. *Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred Ferris whose telephone number is 571-272-3778 and whose normal working hours are 8:30am to 5:00pm Monday to Friday. Any inquiry of a general nature relating to the status of this application should be directed to the group receptionist whose telephone number is 571-272-3700. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamini Shah can be reached at 571-272-2279. The Official Fax Number is: (703) 872-9306*

Fred Ferris, Primary Examiner  
Simulation and Emulation, Art Unit 2128  
U.S. Patent and Trademark Office  
Randolph Building, Room 5D19  
401 Dulany Street  
Alexandria, VA 22313  
Phone: (571-272-3778)  
Fred.Ferris@uspto.gov  
November 10, 2006

  
FRED FERRIS  
PRIMARY EXAMINER  
TECHNOLOGY CENTER 2100